Activity Title: BEARLY BORN — Activity Guide Page #: 6

Objective(s): Students will be able to identify similar survival needs of black bears and human babies.

Overview: Students illustrate, compute, and graph differences between people and black bears at various stages of maturity.

Subject Area(s): Science, Math — Grade Level(s): 4-7

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics A. Numbers and Number Sense Students will understand and demonstrate a sense of what numbers mean and how they are used.	Middle Grades 5-8 4. Represent numerical relationships in graphs, tables, and charts.	Procedure #3 Graphing data for both estimate of bear growth and student growth to develop skills.	• students will write a journal entry comparing the two sets of data

Activity Title: SPIDER WEB GEOMETRY			Activity Guide Page #: 58
Objective(s): Students will: 1) recognize spiders as wildlife; and 2) generalize that people and wildlife share environments.			
Overview: Students research the spider of their choice, and then construct a replica of the spider's web, applying principles of geometry.			
Subject Area(s): Math, Science, Language Arts, Art			Grade Level(s):10-12
Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics E. Geometry Students will understand and apply concepts from geometry.	Elementary Grades 3-4 4. Use the properties of shapes and figures to describe the physical world.	Procedure #3 Students should design a replica of the spider web using recognizable geometric shapes.	• all students should recreate spider web using geometric shapes
	Middle Grades 5-8 2. Apply geometric properties to represent and solve real-life problems involving regular and irregular shapes.	Procedure #4 The web should be constructed to scale and made as realistic as possible.	• all students should recreate spider web using geometric shapes
	Middle Grades 5-8 4. Use the appropriate geometric tools and measurements to draw and construct two and three dimensional figures.	Procedure #5 What theorems of geometry were most useful in their web construction.	• make sure students at this level write proofs to support their geometric theorems

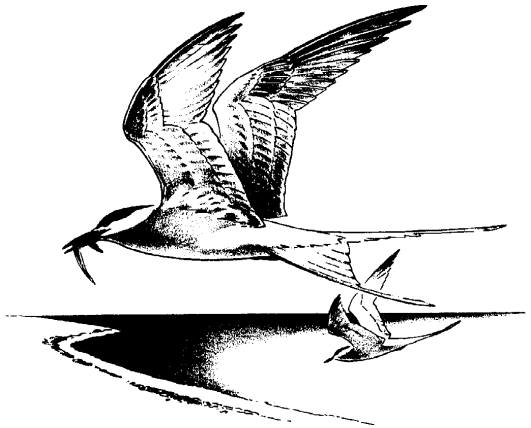
Activity Title: LET'S GO FLY A KITE — Activity Guide Page #: 74

Objective(s): Students will: be able to recognize that wildlife has value as an inspiration for art.

Overview: Students design, make and fly kites.

Subject Area(s): Math, Science, Art — Grade Level(s): 4-6

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics E. Geometry Students will understand and apply concepts from geometry.	Middle Grades 5-8 4. Use the appropriate geometric tools and measurements to draw and construct two and three dimensional figures.	Procedure #5 Let students plan a design and build a kite from that plan.	• make sure each student measures appropriately • draw plan on paper first
Mathematics F. Measurement Students will understand and demonstrate measurement skills.	Elementary Grades 3-4 2. Select measuring tools and units of measurement that are appropriate for what is being measured.	Procedure #5	• see above
	Middle Grades 5-8 3. Demonstrate an understanding of length, area, volume, and the corresponding units, square units, and cubic units of measure.	Procedure #5	• see above



Activity Title: SEED NEED — Activity Guide Page #: 78

Objective(s): Students will: 1) explain how seeds are carried by animals; and 2) evaluate the importance of wildlife as contributors to ecological systems based on this example of seed dispersal.

Overview: Students gather seeds by going outside and wearing socks over their shoes.

Subject Area(s): Science, Math, Social Studies — Grade Level(s): 5-6

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics C. Data Analysis and Statistics Students will understand and apply concepts of data analysis.	Elementary Grades Pre-K-2 1. Formulate and solve problems by collecting, arranging, and interpreting data.	Procedure #4 Students record the kinds of things stuck to the sock. Tally the number of each kind of thing on a sock as well.	• have each student tally seeds
	Elementary Grades Pre-K-2 2. Make tallies and graphs of information gathered from immediate surroundings.	Procedure #4	• see above
	Elementary Grades 3-4 1. Make generalizations and draw conclusions using various types of graphs, charts, and tables.	Procedure #4	• see above
	Elementary Grades 3-4 2. Read and interpret displays of data.	Procedure #4	• see above
	Middle Grades 5-8 1. Organize and analyze data using mean, median, mode, and range.	Procedure #4	• see above
	Middle Grades 5-8 3. Construct inferences and convincing arguments based on data.	Procedure #4	• make sure students use mean, median mode and range in this activity
Mathematics F. Measurement Students will understand and demonstrate measurement skills.	Elementary Grades Pre-K-2 1. Estimate and measure length, time, temperature, weight, and capacity.	Extension #1 Measure the plants that grow. Use strips of paper to measure and construct a bar graph.	• students should know how to measure for this activity
	Elementary Grades Pre-K-2 3. Select standard and non-standard tools for determining length, time, temperature, weight, and capacity, and use them to solve every day problems.	Extension #1 Measure the plants that grow. Use strips of paper to measure and construct a bar graph.	• see above

	Elementary Grades 3-4 2. Select measuring tools and units of measurement that are appropriate for what is being measured.	<u>Extension #1</u> Use a metric ruler and plot measurements on a live graph.	• students should know how to measure

Activity Title: ENVIRONMENTAL BAROMETER — Activity Guide Page #: 80

Objective(s): Students will: 1) observe and count wildlife in an area; 2) discuss why the wildlife is or is not present; and 3) consider ways in which the presence of wildlife can be seen as an indicator of environmental quality.

Overview: Students go outside to observe and count or estimate wildlife in an area; do the same in another setting to compare findings; and -- optionally -- make a school "environmental barometer."

Subject Area(s): Science, Math, Social Studies — Grade Level(s): 3-5

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics B. Computation Students will understand and demonstrate computation skills.	Elementary Grades Pre-K-2 1. Use and apply estimation with quantities, measurements, computations, and problem-solving.	Procedure #2 If they find evidence instead of sightings, they should estimate the number of wildlife.	• make sure students try to make reasonable estimates •
	Middle Grades 5-8 2. Create, solve, and justify the solution for multi-step, real-life problems including those with ratio and proportion.	Procedure #5 Compare the information from the two charts. Which environment seems to have the most different types of wildlife.	• each student should have an opportunity to compare charts
	Secondary Grades 1. Use various techniques to approximate solutions, determine the reasonableness of answers, and justify the results.	Procedure #2-5 Students observe availability of wildlife and record data, comparing 2 different areas.	• students should keep evidence of sightings in journals, and then transfer information to a chart, table or graph
Mathematics C. Data Analysis and Statistics Students will understand and apply concepts of data analysis.	Elementary Grades Pre-K-2 1. Formulate and solve problems by collecting, arranging, and interpreting data.	Procedure #2 Students should record any wildlife they observe master chart. Procedure #3 Take students to 2nd environment to record any wildlife they observe. Procedure #4 Make a master chart of this environment. Procedure #5 Compare information from both charts.	• see above
	Elementary Grades Pre-K-2 2. Make tallies and graphs of information gathered from immediate surroundings.	Procedure #2 Put all student information on one master chart	• students should keep evidence of sightings in journals, and then transfer information to a

			chart, table or graph • done by teacher, but all students can add information to the chart, make it student-created
	Elementary Grades 3-4 1. Make generalizations and draw conclusions using various types of graphs, charts, and tables.	Procedure #2-5 Students should record any wildlife they observe. Put all student information on one master chart. Take students to 2nd environment to record any wildlife they observe. Make a master chart of this environment. Compare information from both charts.	• students should keep evidence of sightings in a journal, transferring sightings to a chart, table or graph
	Elementary Grades 3-4 2. Read and interpret displays of data.	Procedure #2-5	• see above
	Middle Grades 5-8 1. Construct inferences and convincing arguments based on data.	Procedure #2-5	• see above

Activity Title: MAKE A COAT! Activity Guide Page #: 82

Objective(s): Students will: 1) identify that some historical and present day sources of clothing are plants and animals; 2) collect and analyze data to infer the sources of most materials used in clothing today; and 3) distinguish between some examples of renewable and non-renewable natural resources.

Overview: Students make replicas of coats using different materials and representing varying historical periods.

Subject Area(s): Social Studies, Art, Language Arts, Home Economics, Math Grade Level(s): K-6

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics F. Measurement Students will understand and demonstrate measurement skills.	Elementary Grades 3-4 2. Select measuring tools and units of measurement that are appropriate for what is being measured.	Procedure #3 Have each group make a coat.	• have students use appropriate tools to measure coats before cutting them out

Activity Title: GRAPHANANIMAL — Activity Guide Page #: 100

Objective(s): Students will: identify characteristic life forms in two different environments.

Overview: Students create picture collections of animals in two different habitats, then "visit" the habitat by going on a "nature walk" in their classroom, where they tally the number of animals they see and then graph and compare the results.

Subject Area(s): Science, Math, Language Arts — Grade Level(s): 2-6

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics C. Data Analysis and Statistics Students will understand and apply concepts of data analysis.	Elementary Grades Pre-K-2 1. Formulate and solve problems by collecting, arranging, and interpreting data.	Procedure #5 Let students use their lists to tally the animals they see in each place. Students should total their counts and write that number on their lists.	• have students total their own lists, being certain that students are doing it correctly
	Elementary Grades Pre-K-2 2. Make tallies and graphs of information gathered from immediate surroundings.	Procedure #5	• see above
	Elementary Grades 3-4 1. Make generalizations and draw conclusions using various types of graphs, charts, and tables.	Procedure #6 Show students how to make a bar graph using graph paper using one square for each animal.	• pre-teaching of bar graphs using graphing paper is required
	Elementary Grades 3-4 2. Read and interpret displays of data.	Procedure #6 Show students how to make a bar graph using graph paper using one square for each animal.	• see above
	Middle Grades 5-8 1. Construct inferences and convincing arguments based on data.	Procedure #7 Using graphs, compare two environments. Evaluation #2 Compare graphs of two scientists.	• all students should be given an opportunity to compare graphs • Check each student's comparison

Graphananimal by Jim Verrill

As an introduction to a Woodland Habitat Unit, Jim Verrill at Asa Adams School in Orono has students cut out woodland wildlife photographs from magazines. The students post the bird, mammal, reptile and amphibian pictures on doors and/or bulletin boards around the room. The children then simulate a hike through the woods, even dressing up in hiking gear. Their task is to tally the number of each kind of woodland creature posted. Students enter their totals into a Microsoft Works spreadsheet. The students are then able to transform the data into a bar graph.

Activity Title: HOW MANY BEARS CAN LIVE IN THIS FOREST? Activity Guide Page #: 135

Objective(s): Students will: 1) define a major component of habitat; and 2) identify a limiting factor.

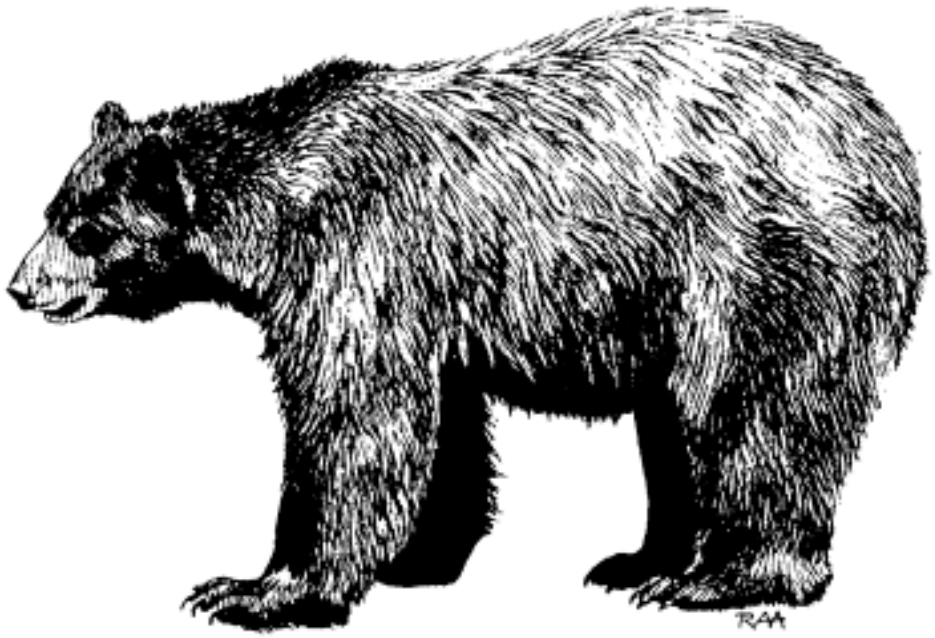
Overview: Students become "bears" to look for one or more components of habitat during this physically-involving activity.

Subject Area(s): Science, Social Studies, Math, Physical Education Grade Level(s): 3-9

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics A. Numbers and Number Sense Students will understand and demonstrate a sense of what numbers mean and how they are used.	Middle Grades 5-8 3. Apply concepts of ratios, proportions, percents, and number theory (e.g., primes, factors, and multiples) in practical and other mathematical situations.	Procedure #11 Students convert pounds gathered into percentages of total food.	• students should show individual calculations in journals
Mathematics C. Data Analysis and Statistics Students will understand and apply concepts of data analysis.	Elementary Grades 3-4 1. Make generalizations and draw conclusions using various types of graphs, charts, and tables.	Procedure #12 What percentage of the bears survived?	• record generalizations and conclusions in individual journals
	Middle Grades 5-8 1. Organize and analyze data using mean, median, mode, and range.	Extension #5 Record how many bears got at least one kind of shelter.	• see above
	Middle Grades 5-8 3. Construct inferences and convincing arguments based on data.	Extension #5	• see above
	Secondary Grades 1. Determine and evaluate the effect of variables on the results of data collection.	Extension #5	• see above
	Secondary Grades 2. Predict and draw conclusions from charts, tables, and graphs that summarize data from practical situations.	Extension #5	• see above
Mathematics B. Computation Students will understand and demonstrate computation skills.	Elementary Grades 3-4 1. Make generalizations and draw conclusions using various types of graphs, charts, and tables.	Procedure #11 Ask students to add up the total number of pounds they have gathered.	• see above
	Middle Grades 5-8 2. Assemble data and use matrices to	Procedure #11	• see above

	formulate and solve problems.		
	Secondary Grades 1. Determine and evaluate the effect of variables on the results of data collection.	Procedure #10	• see above
Mathematics D. Probability Students will understand and apply concepts of probability.	Elementary Grades 3-4 1. Explain the concept of chance in predicting outcomes.	Procedure #12 Ask students to arrive at a class total for all the pounds of food they gathered as bears.	• see above
	Middle Grades 5-8 3. Use simulations to estimate probabilities.	Procedure #11 Ask students to record how many numbers of each category they gathered.	• see above
	Middle Grades 5-8 4. Find all possible combinations and arrangements involving a limited number of variables.	Procedure #11 Procedure #12 Extension #5 Record how many bears got at least one, two, three and four kinds of shelter.	• see above
	Secondary Grades 3. Create and interpret probability distributions.	Procedure #11 Procedure #12 Extension #5	• see above
Mathematics G. Patterns, Relations, Functions Students will understand that mathematics is the science of patterns, relationships, and functions.	Middle Grades 5-8 2. Analyze relationships to explain how a change in one quantity can result in a change in another.	Procedure #11 Procedure #12 Extension #5	
	Secondary Grades 1. Create a graph to represent a real-life situation and draw inferences from it.	Procedure #11 Procedure #12 Extension #5	
Mathematics J. Mathematical Reasoning Students will understand and apply concepts of mathematical reasoning.	Elementary Grades 3-4 1. Demonstrate an understanding that support for a claim should be based on evidence of various types (e.g., from logical processes, from measurement, or from observation and experimentation).	Procedure #11 Procedure #12 Extension #5	
	Middle Grades 5-8 1. Support reasoning by using models, known facts, properties, and	Procedure #11 Procedure #12	

	relationships.	Extension #5	
	Secondary Grades 1. Analyze situations where more than one logical conclusion can be drawn from data presented.	Procedure #11 Procedure #12 Extension #5	
Mathematics K. Mathematical Communication Students will reflect upon and clarify their understanding of mathematical ideas and relationships.	Elementary Grades 3-4 1. Use simple tables and graphs to communicate ideas and information in presentations in a concise and clear manner.	Procedure #11 Procedure #12 Extension #5	



Activity Title: OH DEER! Activity Guide Page #: 146

Objective(s): Students will: 1) identify and describe food, water, and shelter as three essential components of habitat; 2) describe the importance of good habitat for animals; 3) define "limiting factors" and give examples; and 4) recognize that some fluctuations in wildlife populations are natural as ecological systems undergo constant change.

Overview: Students become "deer" and components of habitat in a highly involving physical activity.

Subject Area(s): Science, Mathematics, Social Studies, Physical Education Grade Level(s): 4-12

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics C. Data Analysis and Statistics Students will understand and apply concepts of data analysis.	Elementary Grades 3-4 1. Make generalizations and draw conclusions using various types of graphs, charts, and tables.	Variation #2 Have students create their own graphs. Provide them with years and numbers of deer. They can make picture, line or bar graph.	• if teacher keeps track of how many deer as stated in Procedure #9, students are not involved and do not accomplish learning result
	Elementary Grades 3-4 2. Read and interpret displays of data.	Variation #2	• see above
	Middle Grades 5-8 3. Construct inferences and convincing arguments based on data.	Variation #2	• see above
	Secondary Grades 1. Determine and evaluate the effect of variables on the results of data collection.	Variation #2	• see above
	Secondary Grades 2. Predict and draw conclusions from charts, tables, and graphs that summarize data from practical situations.	Variation #2	• see above

WILD Links/Math

Activity Title: BIRDS OF PREY			Activity Guide Page #: 150
Objective(s): Students will: 1)interpret a graph of an animal population, nothing changes over time; 2) hypothesize a relationship between temperature, ground squirrel behavior and falcon populations; 3) predict the foraging distribution of falcons following the aestivation of ground squirrels; and 4) generalize that ecosystems are comprised of interdependent parts.			
Overview: Students interpret data, and generate and test hypotheses.			
Subject Area(s): Mathematics, Science			Grade Level(s): 10-12
Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics C. Data Analysis and Statistics Students will understand and apply concepts of data analysis.	Middle Grades 5-8 3. Construct inferences and convincing arguments based on data.	<u>Procedure #2</u> Have students interpret graph A answering given questions.	• students should answer questions to procedure #2 in journals
	Secondary Grades 2. Predict and draw conclusions from charts, tables, and graphs that summarize data from practical situations.	<u>Procedure #2</u> Have students interpret graphs B-E testing their ideas and hypothesis.	• see above

WILD Links/Math

Activity Title: CARRYING CAPACITY			Activity Guide Page #: 152
Objective(s): Students will: 1) formulate and test hypotheses related to wildlife populations and carrying capacity; and 2) describe the significance of carrying capacity.			
Overview: Students become herds of animals seeking food in a physically-involving activity.			
Subject Area(s): Mathematics, Science, Social Studies			Grade Level(s): 7-12
Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics C. Data Analysis and Statistics Students will understand and apply concepts of data analysis.	Middle Grades 5-8 3. Construct inferences and convincing arguments based on data.	Procedure #8 Record the number of survivors that result from the various manipulations of carrying capacity on the chalkboard. Ask what can be learned from this numerical representation.	• students should write answers to these questions in individual journals
	Secondary Grades 1. Determine and evaluate the effect of variables on the results of data collection.	Procedure #8	• see above
	Secondary Grades 2. Predict and draw conclusions from charts, tables, and graphs that summarize data from practical situations.	Procedure #8	• see above

Activity Title: I'M THIRSTY — Activity Guide Page #: 154

Objective(s): Students will: make inferences about the importance of adaptation in order for wildlife and other animals to survive.

Overview: Students use data provided to perform mathematical calculations and make inferences.

Subject Area(s): Mathematics, Science — Grade Level(s): 7-12

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics B. Computation Students will understand and demonstrate computation skills.	Middle Grades 5-8 1. Compute and model all four operations with whole numbers, fractions, decimals, sets of numbers, and percents, applying the proper order of operations.	Procedure #1 Provide students with background information about desert bighorn sheep, then have students carry out calculations.	• have each student show and explain how they came up with their answers
	Middle Grades 5-8 2. Create, solve, and justify the solution for multi-step, real-life problems including those with ratio and proportion.	Procedure #1 Provide students with background information about desert bighorn sheep, then have students carry out calculations.	• see above
	Secondary Grades 1. Use various techniques to approximate solutions, determine the reasonableness of answers, and justify the results.	Procedure #3 Predict various complications that could develop if there were only one half the water as before. Extension #1 Research caloric value of available food. Estimate the animals' caloric intake for day, week, and year. Extension #2 Predict the seasonal maximum carrying capacity of the site based on water supply.	• see above

Activity Title: TURKEY TROUBLE — Activity Guide Page #: 164

Objective: Students will: 1) define and give examples of exponential and linear growth rates in wildlife populations; and 2) describe factors that affect and limit growth of wildlife populations.

Overview: Students make computations and interpret results

Subject Area(s): Mathematics, Science, Social Studies, Environmental Problems — Grade Level(s):10-12

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics B. Computation Students will understand and demonstrate computation skills.	Secondary Grades 1. Use various techniques to approximate solutions, determine the reasonableness of answers, and justify the results.	Task #1 Compute the size of Merriam's turkeys for five years using following assumptions.	• students should show all work for their computations
Mathematics C. Data Analysis and Statistics Students will understand and apply concepts of data analysis.	Secondary Grades 1. Explain operations with number systems other than base ten.	Task #2 Plot the population against the five years on a graph.	• see above
Mathematics G. Patterns, Relations, Functions Students will understand that mathematics is the science of patterns, relationships, and functions.	Secondary Grades 1. Create a graph to represent a real-life situation and draw inferences from it.	Task #4 Plot the data from Task 3 on the same graph as used in Task 2.	• see above
	Secondary Grades 3. Model phenomena using a variety of functions (linear, quadratic, exponential, trigonometric, etc.).	Task #5 (3) All populations have the potential to increase at an exponential rate. What factors limit this potential.	• see above

Activity Title: CHECKS AND BALANCES Activity Guide Page #: 186

Objective: Students will be able to: 1) evaluate hypothetical wildlife management decisions; and 2) identify at least four factors that can affect the size of a wildlife population.

Overview: Students become managers of a herd of animals in a paper-and-pencil and discussion-based activity.

Subject Area(s): Mathematics, Science, Vocational Agriculture Grade Level(s): 6-12

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics B. Computation Students will understand and demonstrate computation skills.	Middle Grades 5-8 1. Compute and model all four operations with whole numbers, fractions, decimals, sets of numbers, and percents, applying the proper order of operations.	Procedure #1 Each student is asked to be manager of a moose population.	• have students show calculations done to arrive at answers
	Middle Grades 5-8 2. Create, solve, and justify the solution for multi-step, real-life problems including those with ratio and proportion.	Procedure #2 Some computations will result in fractions.	• see above
Mathematics D. Probability Students will understand and apply concepts of probability.	Middle Grades 5-8 1. Compute and model all four operations with whole numbers, fractions, decimals, sets of numbers, and percents, applying the proper order of operations.	Procedure #2 Some computations will result in fractions.	• see above
	Middle Grades 5-8 4. Find all possible combinations and arrangements involving a limited number of variables.	Procedure #2 Some computations will result in fractions.	• see above
	Secondary Grades 1. Find the probability of compound events and make predictions by applying probability theory.	Extension Add a monetary aspect to the activity.	• see above

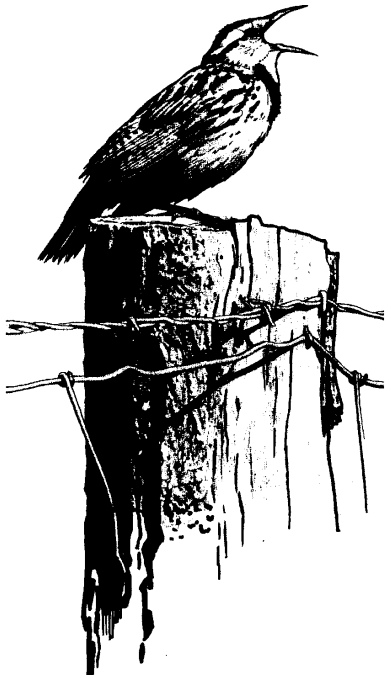
Activity Title: BIRD SONG SURVEY — Activity Guide Page #: 200

Objective: Students will: be able to identify and describe the importance of bird counting as one means of inventorying wildlife populations.

Overview: Students investigate an area and use bird-counting techniques.

Subject Area(s): Mathematics, Science, (Biology, Zoology), Language Arts — Grade Level(s): 9-12

Standard	**Performance Indicators (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics C. Data Analysis and Statistics Students will understand and apply concepts of data analysis.	Secondary Grades 2. Predict and draw conclusions from charts, tables, and graphs that summarize data from practical situations.	Procedure #5 Select a trail, path or road to walk on the area that has an easily discernable starting and ending point. Make and record observations. Procedure #6 Repeat the inventory one or more times that morning to try to account for all breeding. Procedure #7 Once back in class, have the students compile the results of their observations.	• make sure all students take part in compiling all of the information into a classroom chart



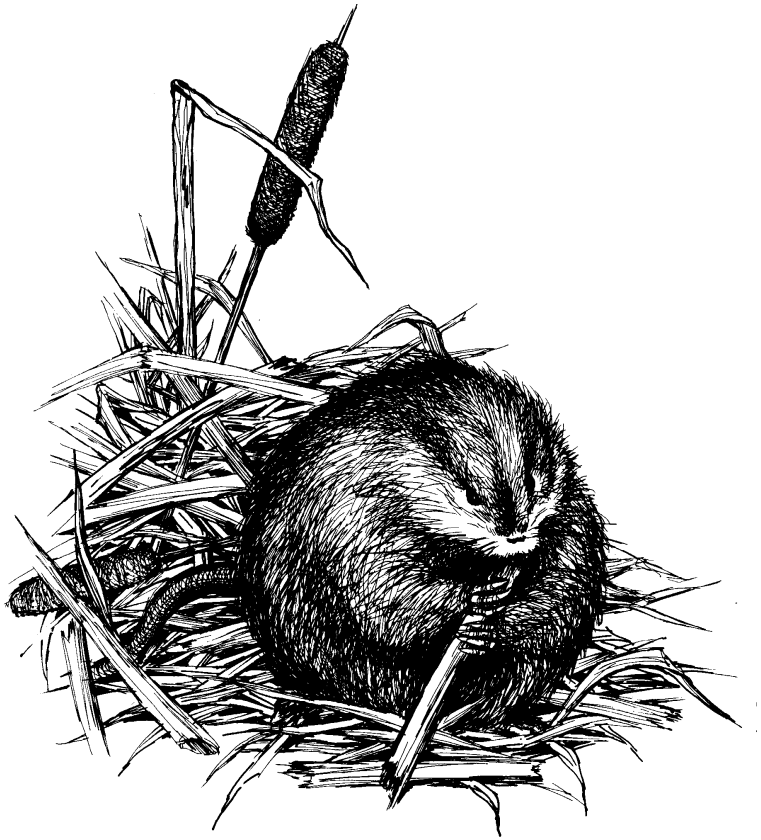
Activity Title: LOBSTER IN YOUR LUNCH BOX — Activity Guide Page #: 222

Objectives: Students will be able to: 1) identify which foods are derived from plants and which from animals; and 2) recognize that all food sources are originally derived from wild plants and animals.

Overview: Students plan and calculate the costs of a family's meals for one day; create a classroom chart; and analyze, discuss, and summarize findings.

Subject Area(s): Mathematics, Science, Language Arts, Health (nutrition) — Grade Level(s): 4-7

Standard	**Performance Indicator (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics A. Numbers and Number Sense Students will understand and demonstrate a sense of what numbers mean and how they are used.	Middle Grades 5-8 1. Apply concepts of ratios, proportions, percents, and number theory (e.g., primes, factors, and multiples) in practical and other mathematical situations.	Procedure #1 and #2 Plan three meals for the day. Make a grocery list of all the ingredients you will need for those meals. Calculate the cost for each meal, finding total cost for all three meals, total for four persons, total for one person. Make a chart to record data. Compare prices of plants and animals. Find percentages of food derived from plants, from animals.	• make sure students show their calculations
	Middle Grades 5-8 4. Represent numerical relationships in graphs, tables, and charts.	Procedure #1 and #2	• see above
Mathematics B. Computation Students will understand and demonstrate computation skills.		Procedure #1 and #2	• see above
	Middle Grades 5-8 1. Create, solve, and justify the solution for multi-step, real-life problems including those with ratio and proportion.	Procedure #1 and #2	• see above
Mathematics C. Data Analysis and Statistics Students will understand and apply concepts of data analysis.	Elementary Grades 3-4 1. Make generalizations and draw conclusions using various types of graphs, charts, and tables.	Procedure #2 Make a chart. Determine which prices are higher – plants or animals.	• see above
	Elementary Grades 3-4 2. Read and interpret displays of data.	Procedure #2 Make a chart. Determine which prices are higher – plants or animals.	• make sure students show their calculations
	Middle Grades 5-8 3. Construct inferences and convincing arguments based on data.	Procedure #2 Make a chart. Determine which prices are higher – plants or animals.	• see above



WILD Links/Math

Activity Title: WILDLIFE ISSUES: COMMUNITY ATTITUDE SURVEY — Activity Guide Page #: 244

Objective(s): Students will: 1) assess the values held by various groups and individuals regarding some selected issue; and 2) distinguish between beliefs, values and attitudes.

Overview: Students develop a questionnaire and conduct a community survey.

Subject Area(s): Language Arts, Environmental Problems, Social Studies, Science, Mathematics — Grade Level(s): 7-12

Standard	**Performance Indicator (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics C. Data Analysis and Statistics Students will understand and apply concepts of data analysis.	Middle Grades 5-8 3. Construct inferences and convincing arguments based on data.	Procedure #5 When the interviews are completed, the students may tally, analyze and discuss the results. (Depending on the level of your students, they could do a wide variety of mathematics with the results.)	• have students record their conclusions in a journal
	Middle Grades 5-8 1. Organize and analyze data using mean, median, mode, and range.	Procedure #5	• see above
	Secondary Grades 1. Determine and evaluate the effect of variables on the results of data collection.	Procedure #5	• see above
	Secondary Grades 2. Predict and draw conclusions from charts, tables, and graphs that summarize data from practical situations.	Procedure #5	• see above
	Secondary Grades 4. Demonstrate an understanding of the idea of random sampling and recognition of its role in statistical claims and designs for data collection.	Procedure #5	• see above
	Secondary Grades 5. Revise studies to improve their validity (e.g., in terms of better sampling, better controls, or better data analysis techniques).	Procedure #5 When the interviews are completed, the students may tally, analyze and discuss the results.	• see above

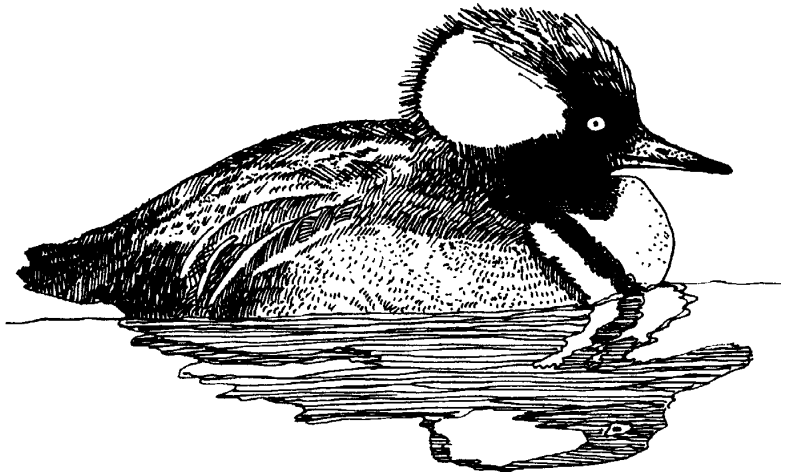
Activity Title: NO WATER OFF A DUCK'S BACK Activity Guide Page #: 274

Objective(s): Students will: 1) identify ways oil spills can affect birds adversely; and 2) describe possible negative consequences to wildlife, people and the environment from human-caused pollutants.

Overview: Students conduct experiments using water, oil, hardboiled eggs, detergent, and feathers.

Subject Area(s): Science, Mathematics, Social Studies, Language Arts, Home Economics Grade Level(s): 6-12

Standard	**Performance Indicator (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics E. Geometry Students will understand and apply concepts from geometry.	Middle Grades 5-8 2. Apply geometric properties to represent and solve real-life problems involving regular and irregular shapes.	Procedure #1 Measure the area covered by the oil. Calculate how much are could be covered by the oil and estimate area covered by 8,000/300,000/and 83,000,000 gallons.	• have students show calculations
	Secondary Grades 2. Use inductive and deductive reasoning to explore and determine the properties of and relationships among geometric figures.	Procedure #1 Measure the area covered by the oil. Calculate how much are could be covered by the oil and estimate area covered by 8,000/300,000/and 83,000,000 gallons.	• have students show their work demonstrating relationships among areas covered.



Activity Title: KEEPING SCORE Activity Guide Page #: 276

Objective(s): Students will: 1) describe cause and effect relationships that help and hinder wildlife in their community; and 2) recommend changes in their community that could benefit wildlife.

Overview: Students investigate their neighborhoods for "cause and effect" relationships affecting wildlife; develop and use "community wildlife scorecards," and recommend actions to improve and/or maintain the quality of wildlife habitat in the community.

Subject Area(s): Science, Social Studies, Language Arts, Mathematics Grade Level(s):4-8

Standard	**Performance Indicator (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics C. Data Analysis and Statistics Students will understand and apply concepts of data analysis.	Elementary Grades 3-4 1. Make generalizations and draw conclusions using various types of graphs, charts, and tables.	Procedure #7 Ask students to keep a score (tally) of each item they see overnight for a period of one week or longer.	• use chart Activity Guide Page # 279 to keep score
	Elementary Grades 3-4 2. Read and interpret displays of data.	Procedure #7	• see above
	Middle Grades 5-8 2. Assemble data and use matrices to formulate and solve problems.	Procedure #7	• see above
Mathematics B. Computation Students will understand and demonstrate computation skills.	Elementary Grades 3-4 1. Solve multi-step, real-life problems using the four operations with whole numbers.	Procedure #8 At the end of the week, ask the students to tally and score their personal sightings. Subtract one (1) point for cause and effect relationship that hurts wildlife. Add one (1) point that helps, zero for sightings with no impact. Procedure #9 Combine personal scores and come up with whole class sighting score.	• see above
	Middle Grades 5-8 1. Compute and model all four operations with whole numbers, fractions, decimals, sets of numbers, and percents, applying the proper order of operations.	Procedure #8 Procedure #9	• see above

Activity Title: WATER'S GOING ON?! Activity Guide Page #: 304

Objective(s): Students will: 1) record and interpret how much water they use in a day at school; and 2) make recommendations as to how they can save a significant percentage of that water.

Overview: Students estimate and calculate water use in school and then design and try ways to conserve water.

Subject Area(s): Math, Social Studies, Science, Home Economics Grade Level(s): 5-9

Standard	**Performance Indicator (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics B. Computation Students will understand and demonstrate computation skills.	Elementary Grades 3-4 1. Solve multi-step, real-life problems using the four operations with whole numbers.	Procedure #3 As a class, calculate the amount of water used. Procedure #5 Add all the individual gallons of water used.	• have students keep a record of water consumption in journals
	Middle Grades 5-8 1. Compute and model all four operations with whole numbers, fractions, decimals, sets of numbers, and percents, applying the proper order of operations.	Procedure #3 As a class, calculate the amount of water used. Procedure #5 Add all the individual gallons of water used.	• see above
	Secondary Grades 1. Use various techniques to approximate solutions, determine the reasonableness of answers, and justify the results.	Procedure #1 Ask students to estimate how much water each student uses each day in school.	• see above
Mathematics C. Data Analysis and Statistics Students will understand and apply concepts of data analysis.	Elementary Grades 3-4 1. Make generalizations and draw conclusions using various types of graphs, charts, and tables.	Procedure #2 Record number of times students get a drink, wash their hands or use the bathroom.	• see above
	Elementary Grades 3-4 2. Read and interpret displays of data.	Procedure #2	• see above
	Middle Grades 5-8 3. Construct inferences and convincing arguments based on data.	Procedure #2	• see above

Activity Title: IMPROVING WILDLIFE HABITAT IN THE COMMUNITY — Activity Guide Page #: 324

Objective(s): Students will: 1) apply their knowledge of wildlife by describing essential components of habitat in an arrangement appropriate for the wildlife they identify; and 2) evaluate compatible and incompatible uses of an area by people and specified kinds of wildlife.

Overview: Students design and accomplish a project to improve wildlife habitat in their community.

Subject Area(s): Science, Social Studies, Art, Mathematics, Language Arts — Grade Level(s): 4-12

Standard	**Performance Indicator (by grade clusters)**	**Evidence of alignment (text from activity description)**	**Notes to assure high alignment for every student**
Mathematics B. Computation Students will understand and demonstrate computation skills.	Elementary Grades 3-4 1. Solve multi-step, real-life problems using the four operations with whole numbers.	Procedure #2 Give each group the task of beginning a design for a habitat improvement project. Tell what costs will be involved, who will pay and how.	• students should keep track of their plans in individual journals
	Middle Grades 5-8 2. Create, solve, and justify the solution for multi-step, real-life problems including those with ratio and proportion.	Procedure #2 Give each group the task of beginning a design for a habitat improvement project. Tell what costs will be involved, who will pay and how.	• see above
Mathematics E. Geometry Students will understand and apply concepts from geometry.	Elementary Grades 3-4 4. Use the properties of shapes and figures to describe the physical world.	Procedure #3 To demonstrate and develop skills, have students make a map or model to scale of area.	• see above
	Middle Grades 5-8 2. Apply geometric properties to represent and solve real-life problems involving regular and irregular shapes.	Procedure #3 To demonstrate and develop skills, have students make a map or model to scale of area.	• see above
	Middle Grades 5-8 4. Use the appropriate geometric tools and measurements to draw and construct two and three-dimensional figures.	Procedure #3 To demonstrate and develop skills, have students make a map or model to scale of area.	• see above